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Clement et al.

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(54) **SYSTEM LEVEL VIRTUAL REALITY
PRIVACY SETTINGS**

(56) **References Cited**

U.S. PATENT DOCUMENTS

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(US)

10,115,141 B1 * 10/2018 Warman G06Q 30/0615
10,228,893 B2 * 3/2019 Todasco G06F 3/1454

(Continued)

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FOREIGN PATENT DOCUMENTS

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WO 2008130842 A1 10/2008

OTHER PUBLICATIONS

(*) Notice: Subject to any disclaimer, the term of this
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Szalavari et al., Collaborative Gaming in Augmented Reality, Google
Scholar 1998, pp. 1-19. (Year: 1998).*

(Continued)

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claimer.

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A63F 13/35; A63F 13/71

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(57) **ABSTRACT**

Computer-implemented systems and methods are described for configuring a plurality of privacy properties for a plurality of virtual objects associated with a first user and a virtual environment being accessed using a device associated with the first user, triggering for display, in the virtual environment, the plurality of virtual objects to the first user accessing the virtual environment, determining whether at least one virtual object is associated with a privacy setting corresponding to the first user. In response to determining that a second user is attempting to access the one virtual object, a visual modification may be applied to the object based on a privacy setting. The method may also include triggering for display, the visual modification of the at least one virtual object, to the second user while continuing to trigger display of the at least one virtual object without the visual modification to the first user.

20 Claims, 11 Drawing Sheets

